Figure 1: Verification of differential expression of human DAX-1 by quantitative RT-PCR

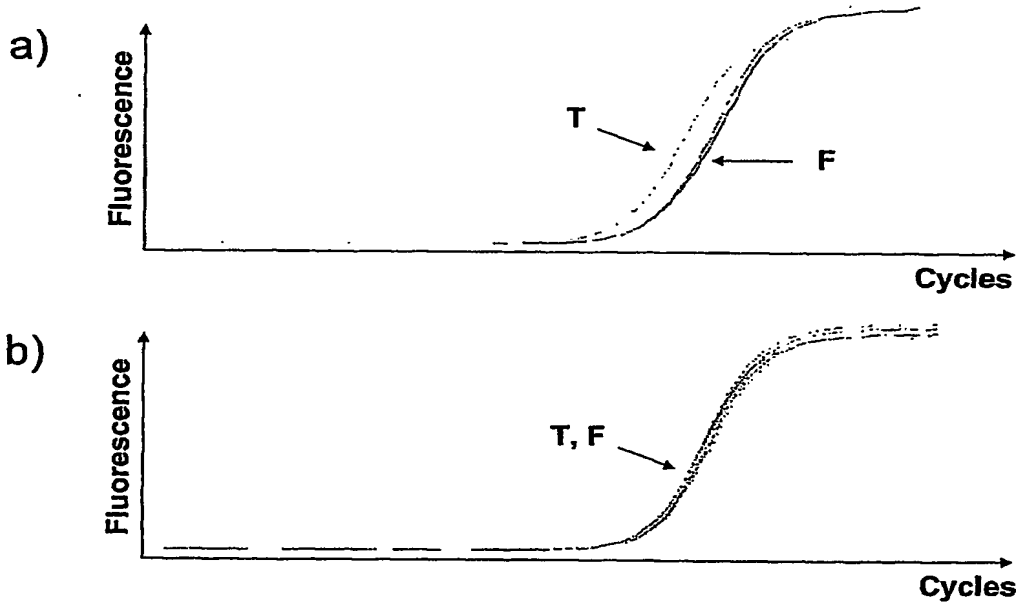

Figure 2: Verification of differential expression of human DAX-1 by quantitative RT-PCR

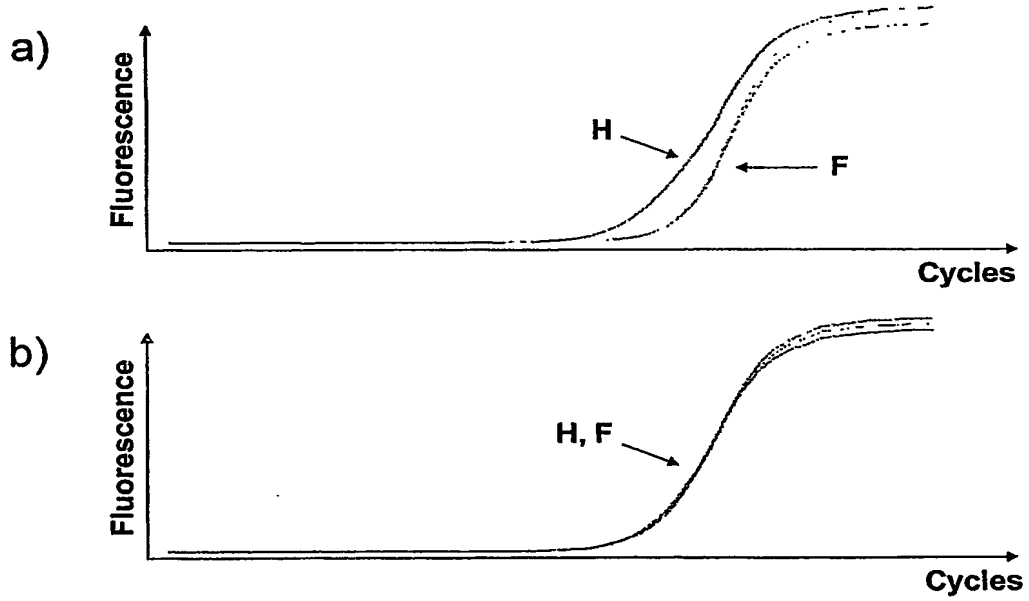

Figure 3: Analysis of absolute mRNA expression of DAX-1

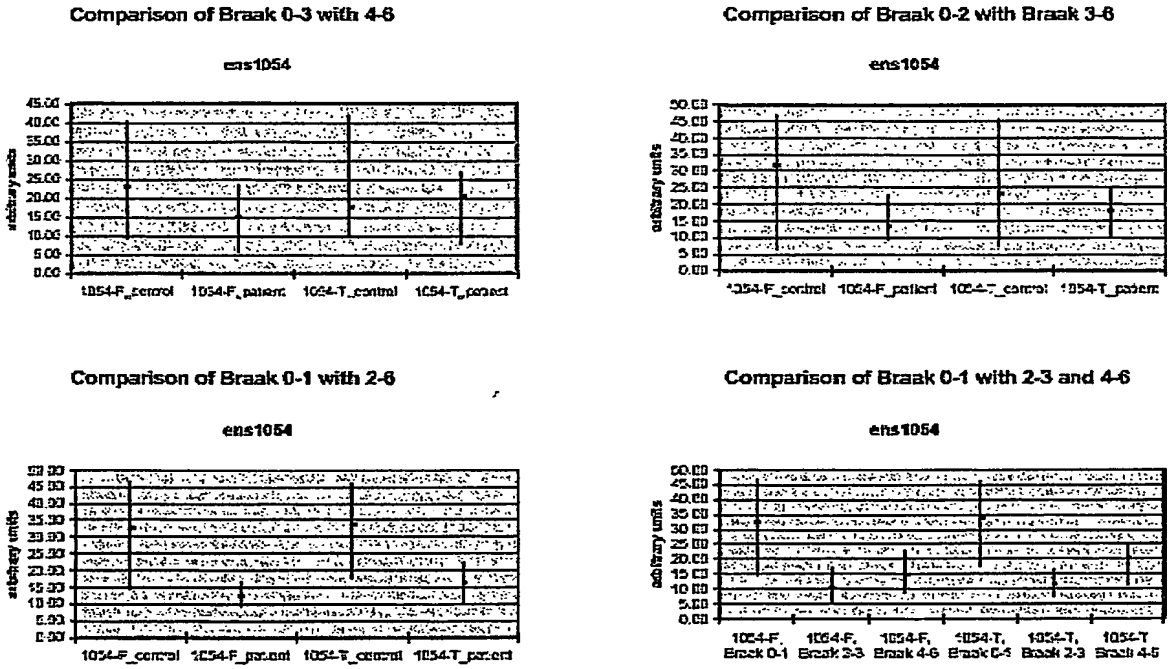

Figure 4: SEQ ID NO. 1: amino acid sequence of human DAX-1 protein

Length: 470 aa

```
  1  MAGENHQWQG SILYNMLMSA KQTRAAPEAP ETRLVDQCWG CSCGDEPGVG
 51  REGLLGGRNV ALLYRCCFCG KDHPRQGSIL YSMLTSAKQT YAAPKAPEAT
101  LGPCWGCSCG SDPGVGRAGL PGGRPVALLY RCCFCGEDHP RQGSILYSLL
151  TSSKQTHVAP AAPEARPGGA WWDRSYFAQR PGGKEALPGG RATALLYRCC
201  FCGEDHPQQG STLYCVPTST NQAQAAPEER PRAPWWDTSS GALRPVALKS
251  PQVVCEAASA GLLKTLRFVK YLPCFQVLPL DQQLVLVRNC WASLLMLELA
301  QDRLQFETVE VSEPSMLQKI LTTRRRETGG NEPLPVPTLQ HHLAPPAEAR
351  KVPSASQVQA IKCFLSKCWS LNISTKEYAY LKGTVLFNPD VPGLQCVKYI
401  QGLQWGTQQI LSEHTRMTHQ GPHDRFIELN STLFLLRFIN ANVIAELFFR
451  PIIGTVSMDD MMLEMLCTKI
```

Figure 5: SEQ ID NO. 2: human DAX-1 cDNA nucleotide sequence

Length: 2022 bp

```
   1  GAGCTCCCAC GCTGCTGTTC TTCCATTTCC AGCTTTTAAA GAGCACCCGC
  51  CCCTTCGAAC CACCGAGGTC ATGGGCGAAC ACACCGGAGC GCAGACCGCG
 101  CCCCCCCGCA CACACCGCCC GCCTCCGCGC CCTTGCCCAG ACCGAGGCGG
 151  CCGACGCGCC TGCGTGCGCG CTAGGTATAA ATAGGTCCCA GGAGGCAGCC
 201  ACTGGGCAGA ACTGGGCTAC GGGCGCCGCG GGCCATGGCG GGCGAGAACC
 251  ACCAGTGGCA GGGCAGCATC CTCTACAACA TGCTTATGAG CGCGAAGCAA
 301  ACGCGCGCGG CTCCTGAGGC TCCAGAGACG CGGCTGGTGG ATCAGTGTTG
 351  GGGCTGTTCG TGCGGCGATG AGCCCGGGGT GGGCAGAGAG GGGCTGCTGG
 401  GCGGGCGGAA CGTGGCGCTC CTGTACCGCT GCTGCTTTTG CGGTAAAGAC
 451  CACCCACGGC AGGGCAGCAT CCTCTACAGC ATGCTGACGA GCGCAAAGCA
 501  AACGTACGCG GCACCGAAGG CGCCCGAGGC GACGCTGGGT CCGTGCTGGG
 551  GCTGTTCGTG CGGCTCTGAT CCCGGGGTGG GCAGAGCGGG GCTTCCGGGT
 601  GGGCGGCCCG TGGCACTCCT GTACCGCTGC TGCTTTTGTG GTGAAGACCA
 651  CCCGCGGCAG GGCAGCATCC TCTACAGCTT GCTCACTAGC TCAAAGCAAA
 701  CGCACGTGGC TCCGGCAGCG CCCGAGGCAC GGCCAGGGGG CGCGTGGTGG
 751  GACCGCTCCT ACTTCGCGCA GAGGCCAGGG GGTAAAGAGG CGCTACCAGG
 801  CGGGCGGGCC ACGGCGCTTC TGTACCGCTG CTGCTTTTGC GGTGAAGACC
 851  ACCCGCAGCA GGGCAGCACC CTCTACTGCG TGCCCACGAG CACAAATCAA
 901  GCGCAGGCGG CTCCGGAGGA GCGGCCGAGG GCCCCCTGGT GGGACACCTC
 951  CTCTGGTGCG CTGCGGCCGG TGGCGCTCAA GAGTCCACAG GTGGTCTGCG
1001  AGGCAGCCTC AGCGGGCCTG TTGAAGACGC TGCGCTTCGT CAAGTACTTG
1051  CCCTGCTTCC AGGTGCTGCC CCTGGACCAG CAGCTGGTGC TGGTGCGCAA
1101  CTGCTGGGCG TCCCTGCTCA TGCTTGAGCT GGCCCAGGAC CGCTTGCAGT
1151  TCGAGACTGT GGAAGTCTCG GAGCCCAGCA TGCTGCAGAA GATCCTCACC
1201  ACCAGGCGGC GGGAGACCGG GGGCAACGAG CCACTGCCCG TGCCCACGCT
1251  GCAGCACCAT TTGGCACCGC CGGCGGAGGC CAGGAAGGTG CCCTCCGCCT
1301  CCCAGGTCCA AGCCATCAAG TGCTTTCTTT CCAAATGCTG GAGTCTGAAC
1351  ATCAGTACCA AGGAGTACGC CTACCTCAAG GGGACCGTGC TCTTTAACCC
1401  GGACGTGCCG GGCCTGCAGT GCGTGAAGTA CATTCAGGGA CTCCAGTGGG
1451  GAACTCAGCA AATACTCAGT GAACACACCA GGATGACGCA CCAAGGGCCC
1501  CATGACAGAT TCATCGAACT TAATAGTACC CTTTTCCTGC TGAGATTCAT
1551  CAATGCCAAT GTCATTGCTG AACTGTTCTT CAGGCCCATC ATCGGCACAG
1601  TCAGCATGGA TGATATGATG CTGGAAATGC TCTGTACAAA GATATAAAGT
1651  CATGTGGGCC ACACAAGTGC AGTAGTGCAG TTCACCATGA GGGAAGAATA
1701  AAGAGCTGTG GGCAAAAGAG TGTAAAATAT TTTAAAATAA ACTTTCTTAA
1751  TATTTTTACA TGCAGAGTAT TTTGATCTTC AATTAAAGAA ATAATTTTAT
1801  TCCCAGCACA GTCACAAATT TCTCTGTTCC ATAGTTAAAG AAGACATTTG
1851  CCAACAGGTA GCATAGCTCT GTACATCTTT TAAAAAAAAA ATCGCAGGGT
1901  ACTAGTATAA TAAGCTATTT TCACAAGCGC AGCAATTTCA TGGAACCTGC
1951  TCAAATCAAA TTTGTACATA TTGTTATAAT AAATTTTAAG GTCTTAACTA
2001  TTAACTTGAT TGAAAAAAGC TT
```

Figure 6: SEQ ID NO. 3: nucleotide sequence of human DAX-1 coding sequence

Length: 1413 bp

```
   1  ATGGCGGGCG AGAACCACCA GTGGCAGGGC AGCATCCTCT ACAACATGCT
  51  TATGAGCGCG AAGCAAACGC GCGCGGCTCC TGAGGCTCCA GAGACGCGGC
 101  TGGTGGATCA GTGTTGGGGC TGTTCGTGCG GCGATGAGCC CGGGGTGGGC
 151  AGAGAGGGGC TGCTGGGCGG GCGGAACGTG GCGCTCCTGT ACCGCTGCTG
 201  CTTTTGCGGT AAAGACCACC CACGGCAGGG CAGCATCCTC TACAGCATGC
 251  TGACGAGCGC AAAGCAAACG TACGCGGCAC CGAAGGCGCC CGAGGCGACG
 301  CTGGGTCCGT GCTGGGGCTG TTCGTGCGGC TCTGATCCCG GGGTGGGCAG
 351  AGCGGGGCTT CCGGGTGGGC GGCCCGTGGC ACTCCTGTAC CGCTGCTGCT
 401  TTTGTGGTGA AGACCACCCG CGGCAGGGCA GCATCCTCTA CAGCTTGCTC
 451  ACTAGCTCAA AGCAAACGCA CGTGGCTCCG GCAGCGCCCG AGGCACGGCC
 501  AGGGGGCGCG TGGTGGGACC GCTCCTACTT CGCGCAGAGG CCAGGGGGTA
 551  AAGAGGCGCT ACCAGGCGGG CGGGCCACGG CGCTTCTGTA CCGCTGCTGC
 601  TTTTGCGGTG AAGACCACCC GCAGCAGGGC AGCACCCTCT ACTGCGTGCC
 651  CACGAGCACA AATCAAGCGC AGGCGGCTCC GGAGGAGCGG CCGAGGGCCC
 701  CCTGGTGGGA CACCTCCTCT GGTGCGCTGC GGCCGGTGGC GCTCAAGAGT
 751  CCACAGGTGG TCTGCGAGGC AGCCTCAGCG GGCCTGTTGA AGACGCTGCG
 801  CTTCGTCAAG TACTTGCCCT GCTTCCAGGT GCTGCCCCTG GACCAGCAGC
 851  TGGTGCTGGT GCGCAACTGC TGGGCGTCCC TGCTCATGCT TGAGCTGGCC
 901  CAGGACCGCT TGCAGTTCGA GACTGTGGAA GTCTCGGAGC CCAGCATGCT
 951  GCAGAAGATC CTCACCACCA GGCGGCGGGA GACCGGGGGC AACGAGCCAC
1001  TGCCCGTGCC CACGCTGCAG CACCATTTGG CACCGCCGGC GGAGGCCAGG
1051  AAGGTGCCCT CCGCCTCCCA GGTCCAAGCC ATCAAGTGCT TTCTTTCCAA
1101  ATGCTGGAGT CTGAACATCA GTACCAAGGA GTACGCCTAC CTCAAGGGGA
1151  CCGTGCTCTT TAACCCGGAC GTGCCGGGCC TGCAGTGCGT GAAGTACATT
1201  CAGGGACTCC AGTGGGGAAC TCAGCAAATA CTCAGTGAAC ACACCAGGAT
1251  GACGCACCAA GGGCCCCATG ACAGATTCAT CGAACTTAAT AGTACCCTTT
1301  TCCTGCTGAG ATTCATCAAT GCCAATGTCA TTGCTGAACT GTTCTTCAGG
1351  CCCATCATCG GCACAGTCAG CATGGATGAT ATGATGCTGG AAATGCTCTG
1401  TACAAAGATA TAA
```

Figure 7: Alignment of DAX-1 primers with human DAX-1 cDNA, SEQ ID NO. 2

```
   1 TACCAAGGAGTACGCCTACCTCA 23
     |||||||||||||||||||||||
1356 TACCAAGGAGTACGCCTACCTCA 1378


  20 TGCTCTTTAACCCGGACGTG 1
     ||||||||||||||||||||
1388 TGCTCTTTAACCCGGACGTG 1407
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Figure 8 :

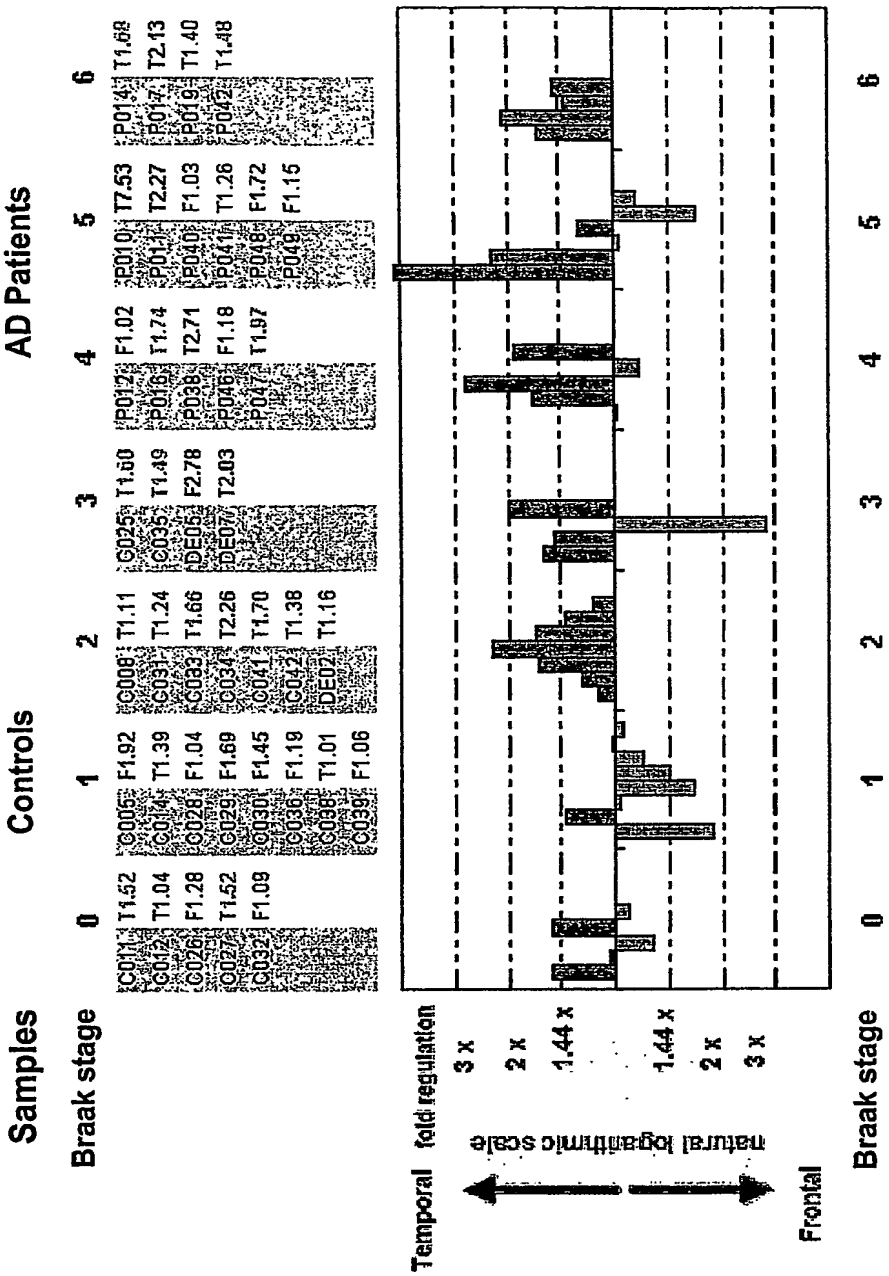

Samples
Controls
AD Patients
Braak stage
0
1
2
3
4
5
6
Temporal
fold regulation
3 x
2 x
1.44 x
natural logarithmic scale
Frontal
Braak stage

Figure 9 :

sample	Δ (fold) (hippocampus/ frontal cortex)
control C005	0.08
control C008	2.23
control C004	1.93
patient P012	1.27
patient P016	4.11
patient P010	13.61
patient P011	1.14
patient P014	2.28
patient P019	2.77

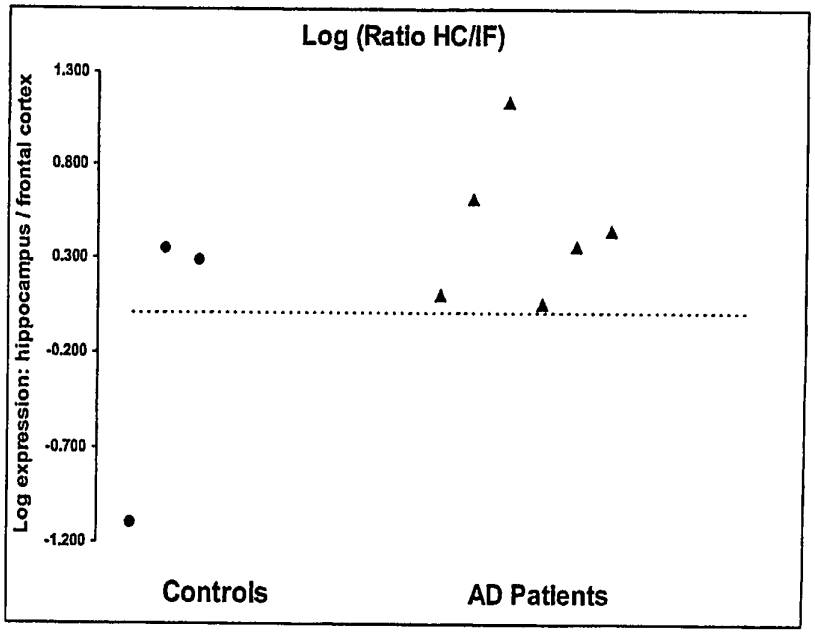


Figure 10: Western Blot of total human brain extracts labeled with anti-DAX-1 antibodies

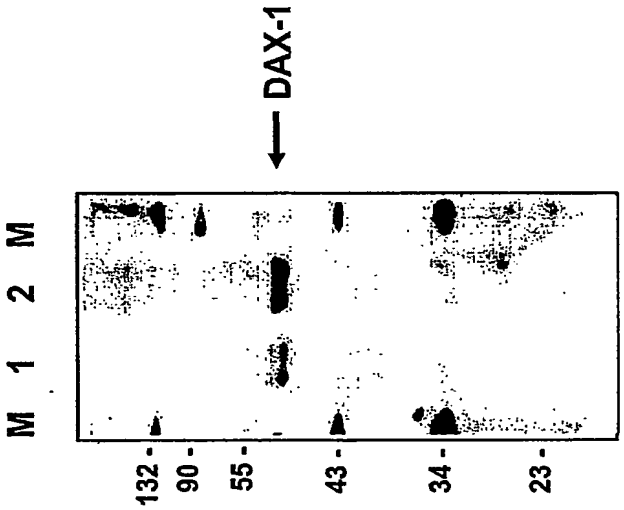


Figure 11: Images of human brain sections labeled with anti-DAX-1 antiserum and with DAPI

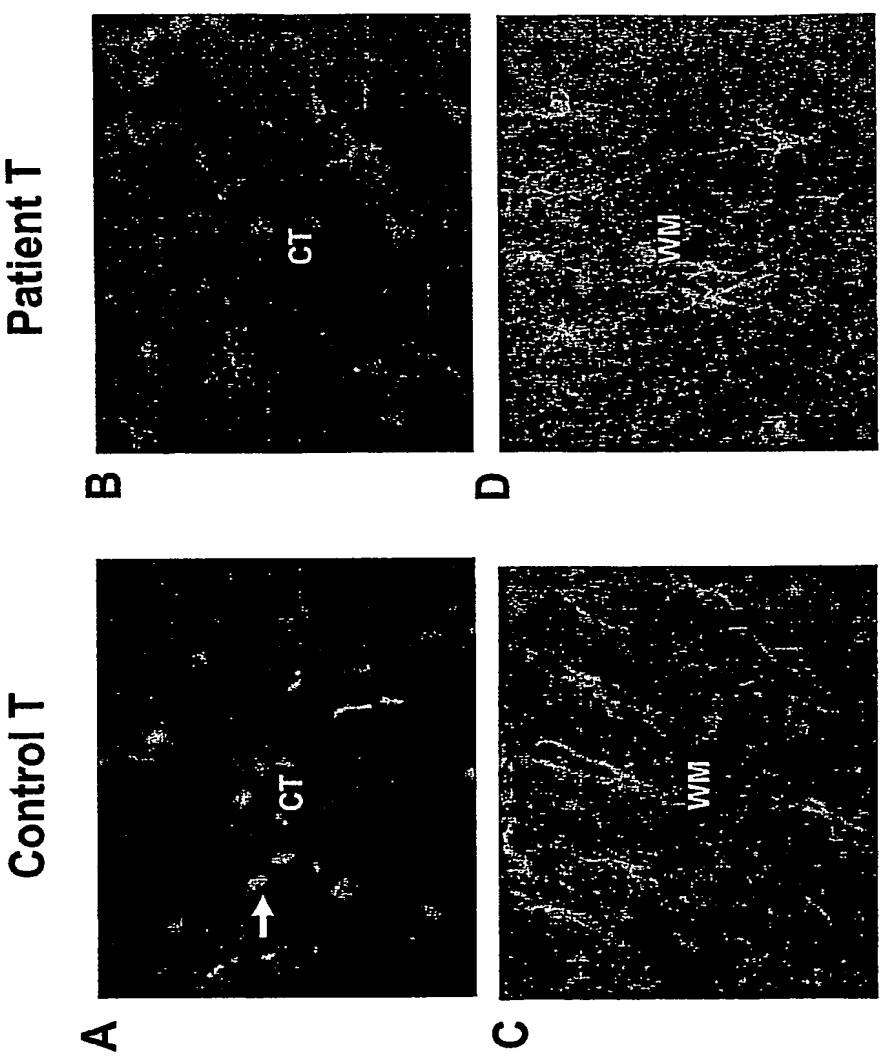


Figure 12: Immunofluorescence analysis of DAX-1 protein in neuroglioma cells

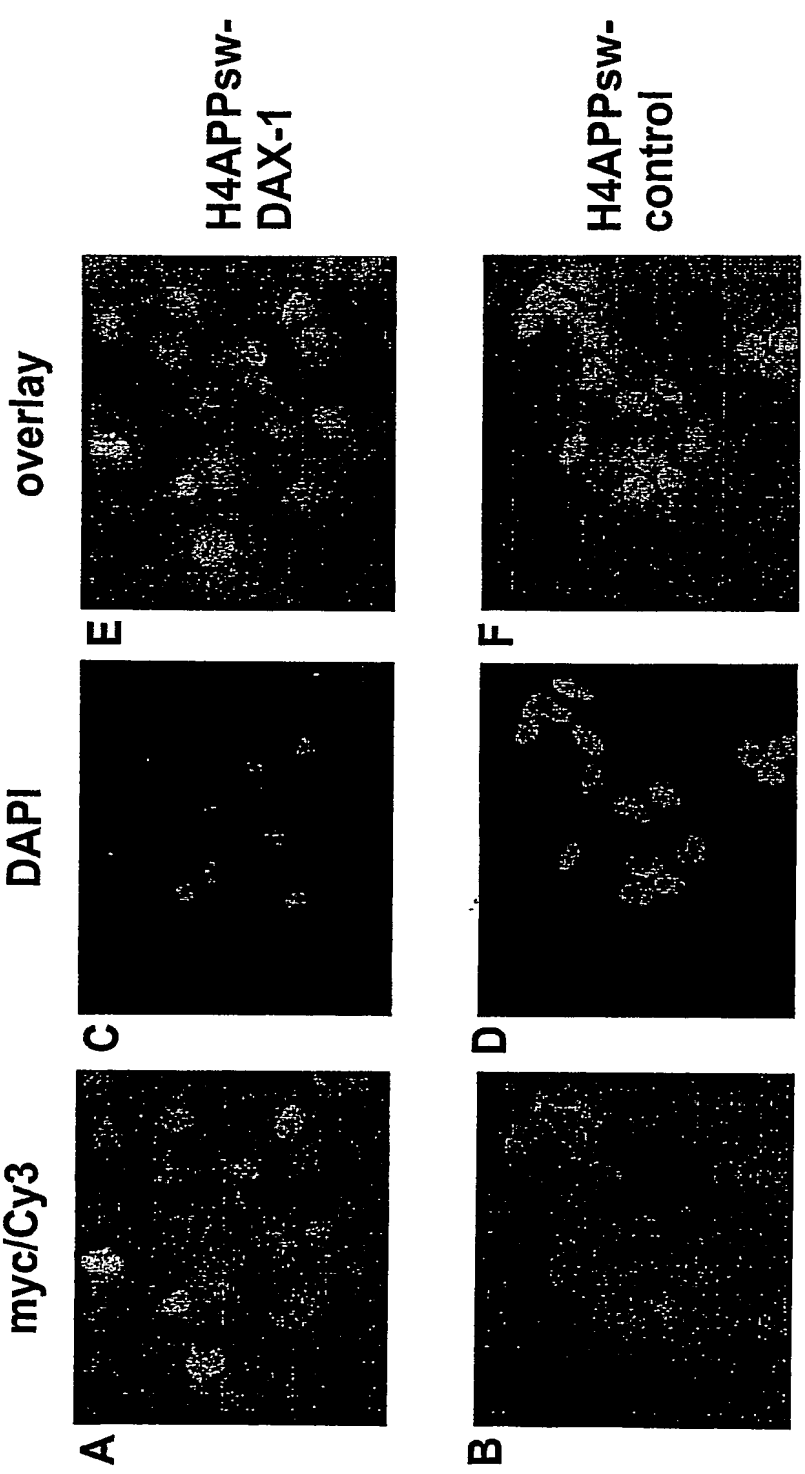


Figure 13: Effect of trophic factor deprivation on DAX-1 over-expressing cells

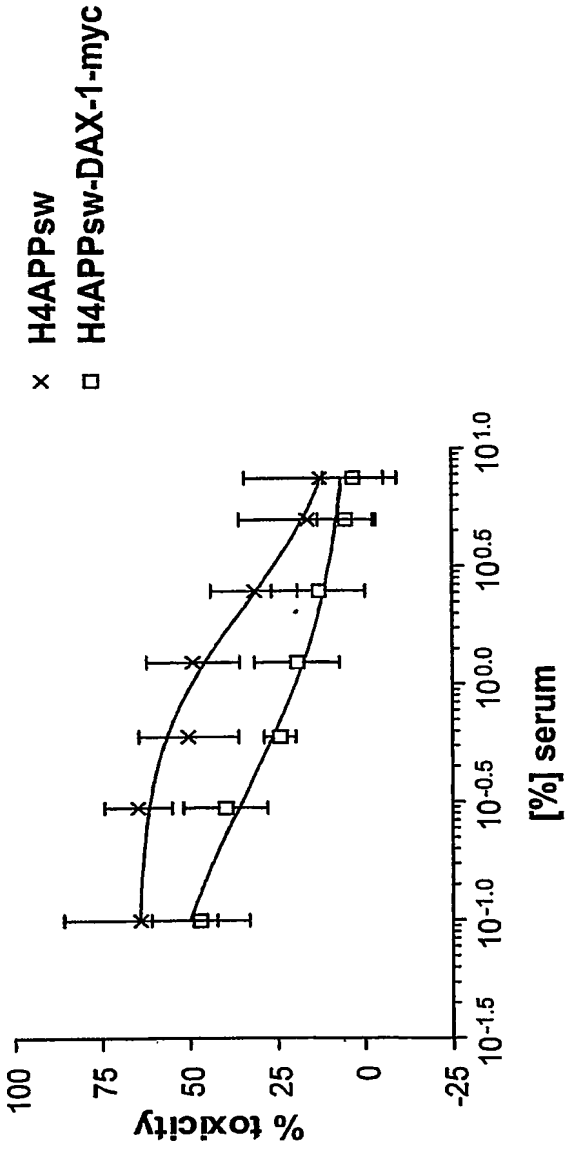


Figure 14: DAX-1 Protein expression in transgenic flies

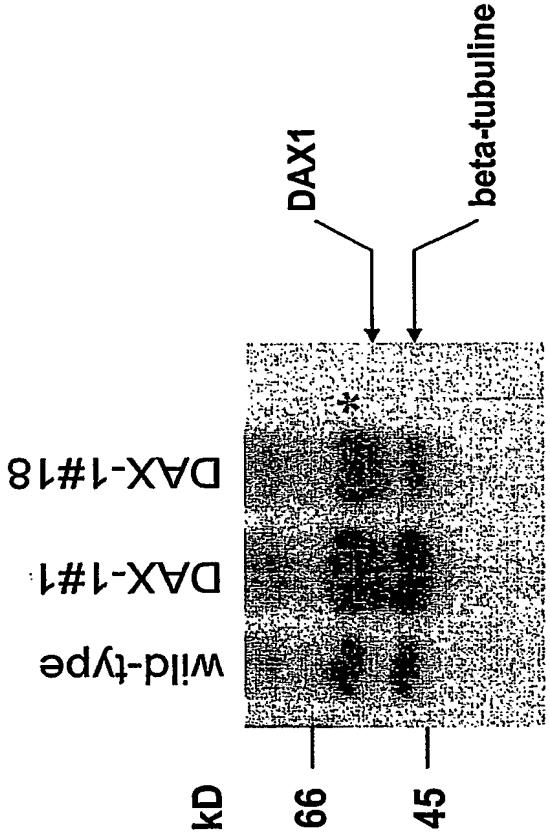


Figure 15: DAX-1 Protein expression in the retina of adult flies

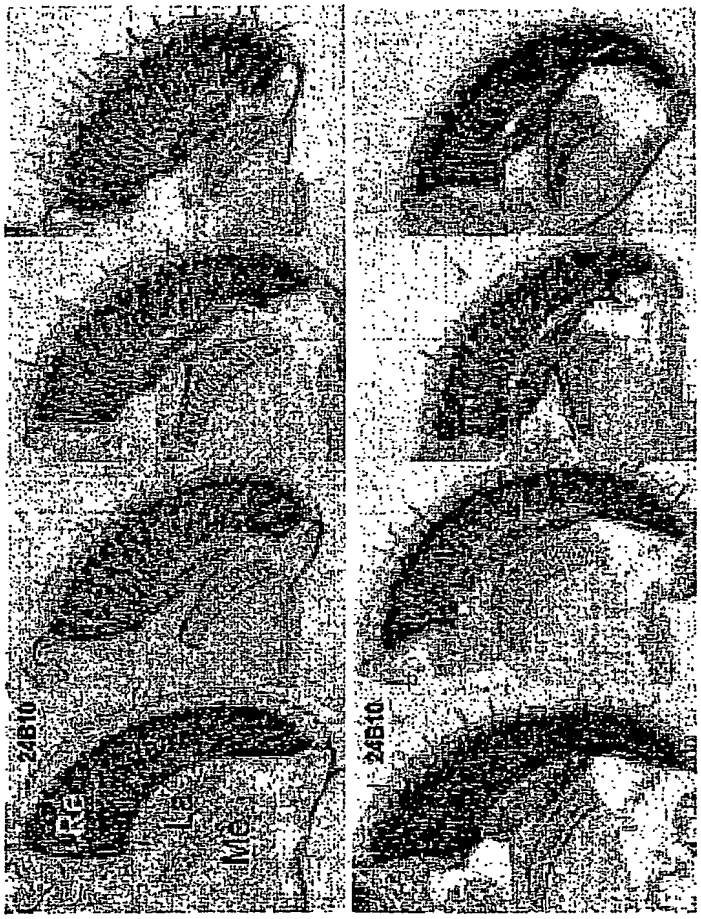


Figure 16: DAX-1 rescues photoreceptor cell degeneration induced by APP/BACE

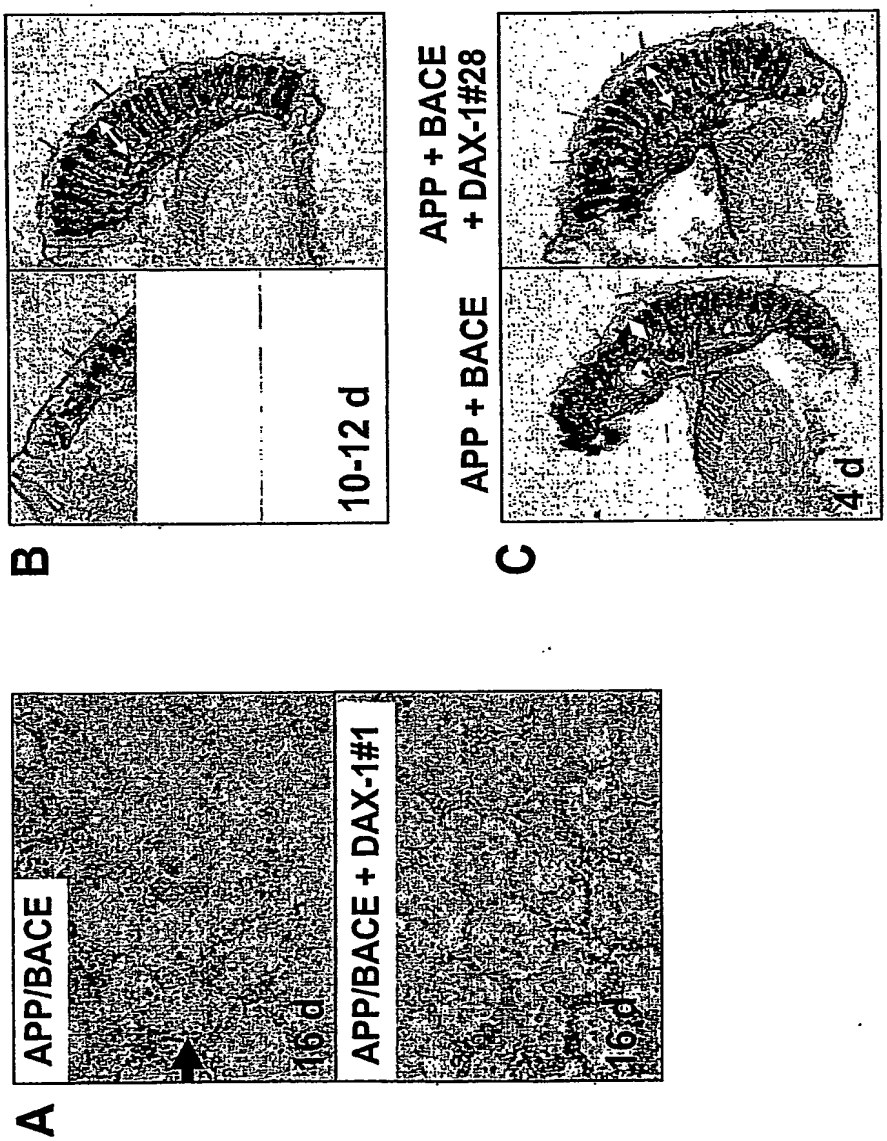


Figure 17: Thioflavin S positive amyloid plaques in DAX-1 expressing flies

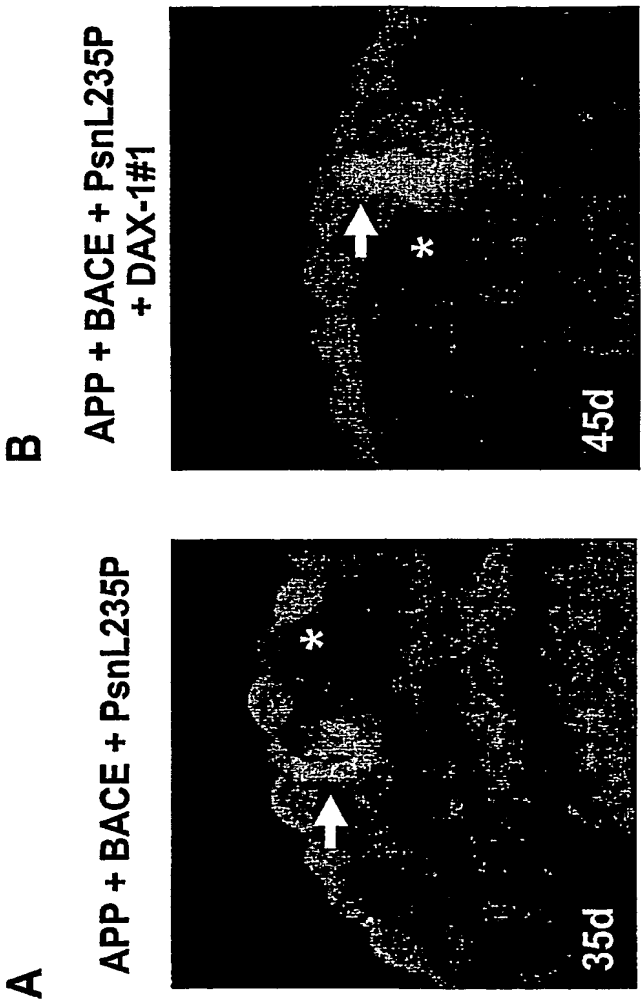


Figure 18: DAX-1 rescues photoreceptor cell degeneration induced by TAU

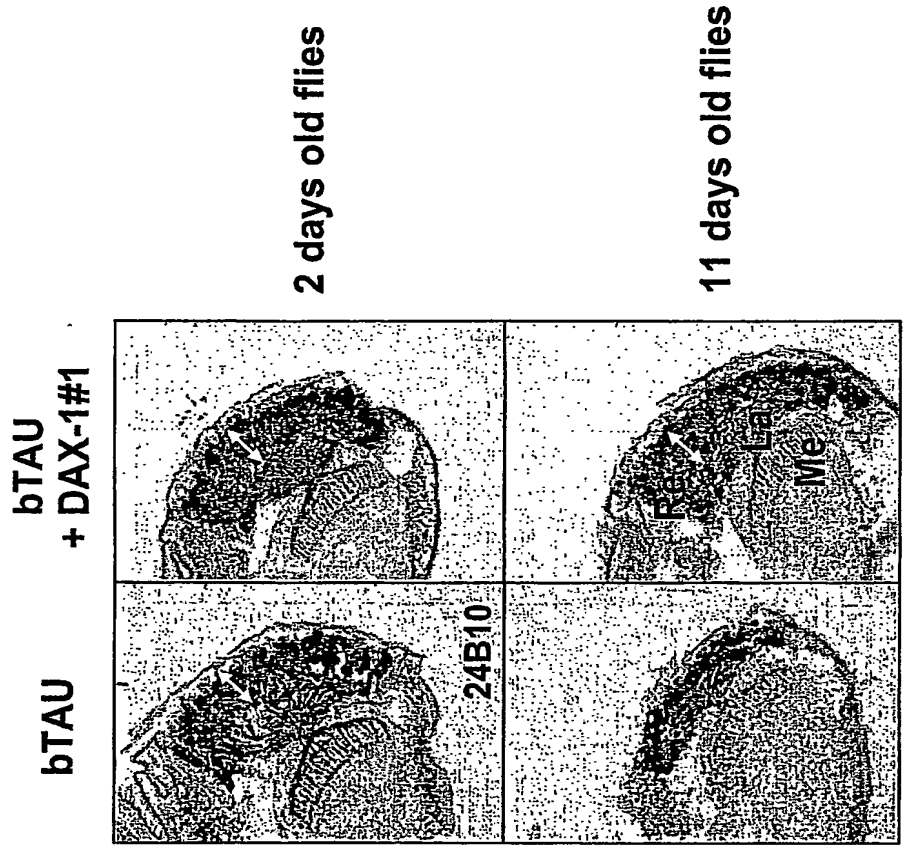


Figure 19: Generation of DAX-1 transgenic mice

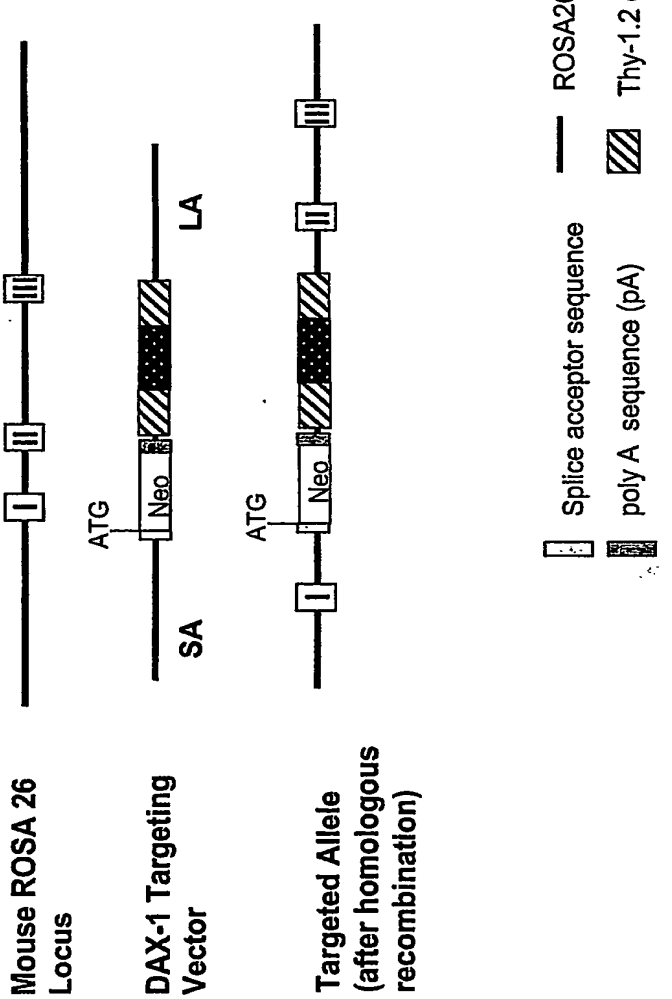
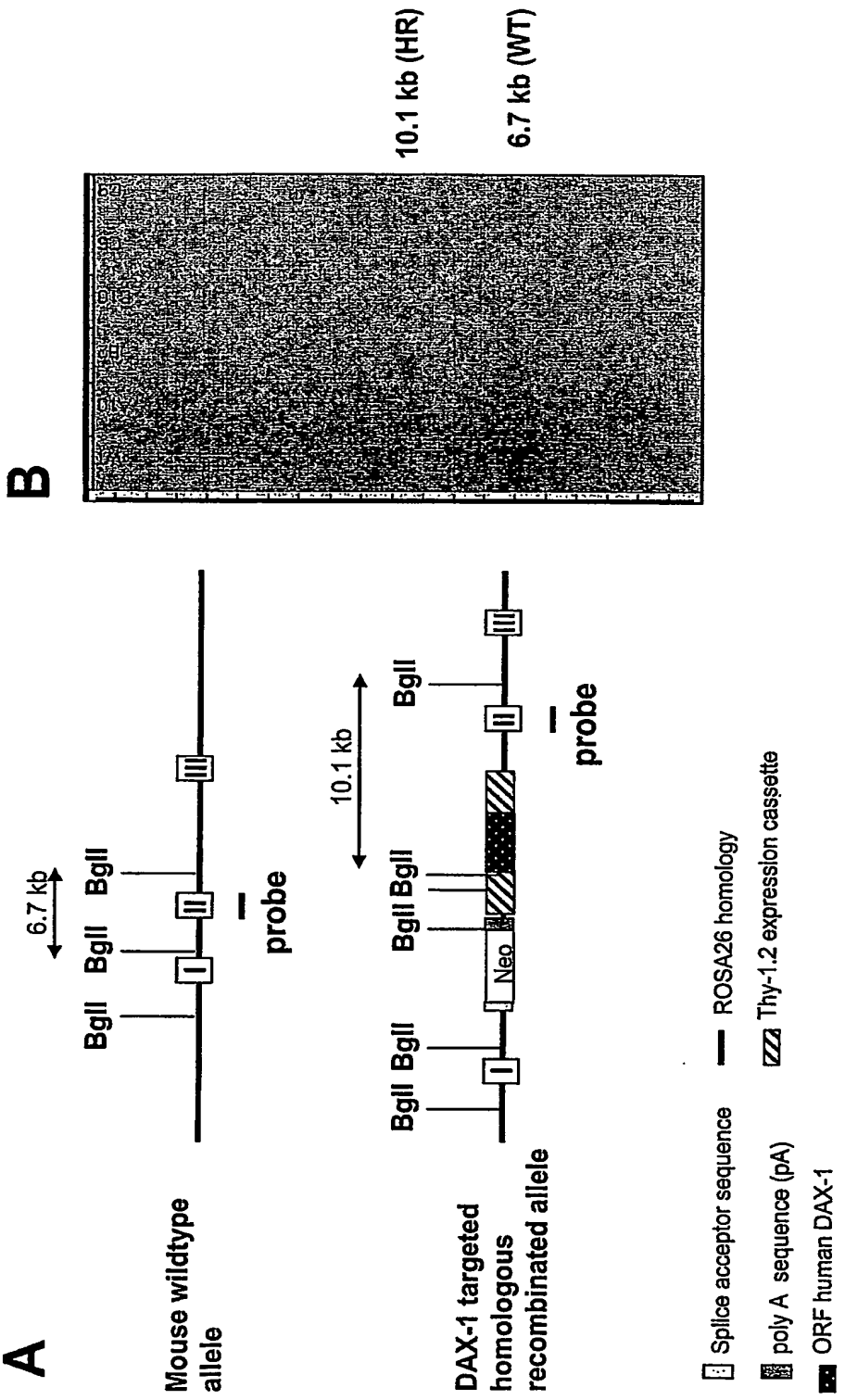


Figure 20: DAX-1 targeted ES cell clones



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